

## ABSTRACT OF THE DISCLOSURE

A method of examining thin layer structures on a surface for differences in respect of optical thickness, which method comprises the steps of: irradiating the surface with light so that the light is internally or externally reflected at the surface; imaging the reflected light on a first two-dimensional detector; sequentially or continuously scanning the incident angle and/or wavelength of the light over an angular and/or wavelength range; measuring the intensities of light reflected from different parts of the surface and impinging on different parts of the detector, at at least a number of incident angles and/or wavelengths, the intensity of light reflected from each part of the surface for each angle and/or wavelength depending on the optical thickness of the thin layer structure thereon; and determining from the detected light intensities at the different light incident angles and/or wavelengths an optical thickness image of the thin layer structures on the surface. According to the invention, part of the light reflected at said surface is detected on a second detector to determine the incident angle or wavelength of the polarized light irradiating the surface. An apparatus for carrying out the method is also disclosed.

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